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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,577	07/31/2001	Gunther Birk	A34441 071308.0199	1863
21003	7590	11/17/2004	EXAMINER SWEARINGEN, JEFFREY R	
BAKER & BOTTS 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			ART UNIT 2145	PAPER NUMBER

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,577

Applicant(s)

BIRK ET AL.

Examiner

Jeffrey R. Swearingen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) * | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/10/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).
2. The effective filing date of this application is 27 September 2000.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 1, items 102, 104, 106, 108, 110, 112, 114. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Networked Sensor System with Control Unit for Detecting Location/Position, Speed, and/or Acceleration.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. **Claims 2, 3, 9** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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7. **Claim 2** recites the limitation "synchronous output interface". There is insufficient antecedent basis for this limitation in the claim.
8. **Claim 3** recites the limitation "synchronous interface". There is insufficient antecedent basis for this limitation in the claim.
9. **Claim 9** recites the limitations "the respective sensor physics", "the respective evaluation circuit", "the control electronics", and "the respective sensor system". There is insufficient antecedent basis for these limitations in the claim. For purposes of compact prosecution Examiner considers "control electronics" to mean "control unit".

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. **Claims 1, 4, 5** rejected under 35 U.S.C. 102(e) as being anticipated by Golab (U.S. Patent No. 6,087,934).
12. Regarding **claim 1**, Golab discloses *a signal generator for generating an analog sensor signal* [Golab discloses an encoder that outputs square waves (analog sensor signals). See Golab, column 9, lines 1-4.], *an evaluation circuit for creating an evaluated analog sensor signal from the analog sensor signal* [Golab discloses a microcontroller which computes a position. Examiner considers this to include an evaluation circuit. See Golab, column 9, lines 8-20.], *an analog/digital converter for converting the evaluated analog sensor signal into a digital output variable* [Golab's microcontroller converts the quadrature signals (analog) to calculate the position of the sensing cable, then computes a virtual

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position. It is Examiner's position that in order for the microcontroller to compute a virtual position, the analog signal must first be converted to a digital signal. See Golab, column 9, lines 17-20.], *a computing means for conversion of the digital output variable into a digital physical output variable value consisting of at least one of a speed value, acceleration value, and a location/position value* [Golab's microcontroller computes a virtual position. Examiner considers this conversion of the digital output variable into a digital physical output variable consisting of a position value. See Golab, column 9, lines 17-20.], *and an output interface for transmitting the digital physical output variable value to a higher-order processing unit at synchronous deterministic times* [Golab discloses that a network input or network controller may be connected to the system. Examiner considers this an output interface for transmitting a value to a higher-order processing unit at synchronous deterministic times. See Golab, column 9, lines 57-61]. By this rationale **claim 1** is rejected.

13. Regarding **claim 4**, Golab is applied as in claim 1. Golab further discloses that the encoder (signal generator) can be replaced by a resolver. [See Golab, column 13, lines 12-13.] By this rationale **claim 4** is rejected.

14. Regarding **claim 5**, Golab is applied as in claim 1. Golab further discloses that the *signal generator is an optical encoder*. [Golab's encoder detects light and dark strips on the encoder wheel. Examiner considers this an optical encoder. See Golab, column 9, lines 4-9.] By this rationale **claim 5** is rejected.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claim 3, 6, 7, 8, 9** rejected under 35 U.S.C. 103(a) as being unpatentable over Golab and Baldwin et al. (U.S. Patent No. 5,971,597).

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17. Regarding **claim 3**, Golab is applied as in claim 1. Golab fails to disclose that the *output interface is a bus system*.

18. However, Baldwin discloses a sensor system that is connected to a bus network and uses a bus data communications protocol. [See Baldwin, column 2, lines 43-48. See Baldwin, Figure 1. See Baldwin, column 4, lines 18-26.]

19. It would be obvious to one of ordinary skill in the networking art at the time of the invention to combine the teachings of Golab and Baldwin for the purpose of using multiple sensors to transmit information to a control unit. [See Baldwin, column 2, lines 24-28.] Golab gives motivation for the combination by stating that his device can be used with a network or network controller to provide further coordination within the area of use [manufacturing area]. [See Golab, column 9, lines 57-61.] By this rationale **claim 3** is rejected.

20. Regarding **claim 6**, the limitations of this claim are substantially the same as the limitations of claim 1. Golab is applied as in claim 1. Golab fails to disclose a control unit that communicates with the sensor system through the output interface.

21. However, Baldwin discloses a control unit that can poll [communicate with] the sensors over the network. [See Baldwin, column 4, lines 1-4.]

22. The motivation for this combination is the same motivation applied to claim 3. By this rationale **claim 6** is rejected.

23. Regarding **claim 7**, Golab and Baldwin are applied as in claim 6. Baldwin further discloses the control unit is a master and the sensor system is a slave unit. [It is Examiner's position that because Baldwin's control unit can poll a sensor system, Baldwin's control unit is a master device and the sensor system is a slave device. See Baldwin, column 4, lines 1-4.] By this rationale **claim 7** is rejected.

24. Regarding **claim 8**, Golab and Baldwin are applied as in claim 6. Baldwin further discloses transmitting temperature information from a circuit. [See Baldwin, figure 1, item 18.] By this rationale **claim 8** is rejected.

25. Regarding **claim 9**, Golab discloses *decoupling the signal generator and the evaluation circuit from the control unit and moving them into the sensor system* [Golab teaches a system that includes the

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evaluation circuit on a microcontroller which is connect to the signal generator. Both are separate from the control unit, which is connected by a network interface. Therefore it is Examiner's position that the signal generator and the evaluation circuit are already decoupled from the control unit in the prior art.

See Golab, column 9, lines 46-61. See Golab, Figure 7.] Golab fails to disclose *and effecting communication between the control unit and each sensor system by means of a digital transmission protocol.*

26. However, Baldwin discloses using a digital transmission protocol [CSMA] to transmit data to the control unit. [See Baldwin, column 2, lines 43-48.]

27. The motivation for the combination of Golab and Baldwin is the same motivation as applied to claim 3. By this rationale **claim 9** is rejected.

28. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Golab and Osako et al. (U.S. Patent No. 6,717,515).

29. Regarding **claim 2**, Golab is applied as in claim 1. Golab fails to disclose the *output interface is a serial interface.*

30. However, Osako discloses that the output interface between a sensor system and a control unit can be a serial interface. [See Osako, column 22, lines 30-32. See Osako, Figure 44, item 8a. See Osako, Figure 45, item 14a.]

31. It would have been obvious to one of ordinary skill in the networking art at the time of the invention to combine the teachings of Golab and Osako for the purpose of allowing a sensor unit to be individually and remotely controlled. [See Osako, column 22, lines 9-14.] Golab gives motivation for the combination by stating that his device can be used with a network or network controller to provide further coordination within the area of use [manufacturing area]. [See Golab, column 9, lines 57-61.] By this rationale **claim 2** is rejected.

Conclusion

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32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kang B. Lee and Richard D. Schneeman. "Internet-Based Distributed Measurement and Control Applications." IEEE Instrumentation and Measurement Magazine. June 1999. pp 23-27.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Swearingen whose telephone number is (571) 272-3921. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey R. Swearingen
Examiner
Art Unit 2145

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